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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

November 13, 2006

TO: Internal File

THRU: D. Wayne Hedberg, Permit Supervisor
Pete Hess, Team Lead

FROM: James D. Smith, Environmental Scientist III JDS 11/17/06

RE: Snow Storage, CO-OP Mining Company, Bear Canyon Mine, C/015/0025, Task ID #2669

SUMMARY:

This amendment has been submitted to mitigate violation N06-46-2-2. The violation was issued, in part, for failure to design adequate drainage controls, snow storage areas, and runoff treatments for snow melt for the Primary #3 Mine Access Road, which also accesses the #4 Mine. The violation was modified on September 15, 2006 to allow the Permittee to begin construction of the snow storage areas on an as-needed basis, before final approval of the designs.

To streamline approval of the snow storage amendment, the Permittee has removed from the submittal the Wild Horse Ridge Tank Seam as-built information, which is not pertinent to violation N06-46-2-2. The as-built information is to be resubmitted as a separate amendment.

Permittee's Action		DOGM's Action	
Original submittal	05/10/2006	Assigned Task # 2523	
		Tech Memo – Hydrology	07/03/2006
		Letter with deficiency list.	07/06/2006
Response to Task # 2523	07/20/2006	Assigned Task # 2588	
		Tech Memo – Hydrology	09/13/2006
		Letter with deficiency list. The Permittee was asked to submit the Wild Horse Ridge Tank Seam as-built information separately.	09/13/2006
Response to Task # 2588	10/04/2006	Assigned Task # 2669	
Additional information	11/06/2006	Tech Memo – Hydrology	11/06/2006
Additional information	11/09/2006	Revised Tech Memo – Hydrology	11/13/2006
		Conditional approval	11/13/2006

TECHNICAL ANALYSIS:

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

General

Snow storage areas, BTCA H - Areas 1 through 8, are shown on Plates 7-1B, 7-1F and 7-1G. They are described on pages 7K-12A and 7K-12B. Determining the volume of snow to be stored required several assumptions, which are described. The Permittee used 30 inches as the average snow pack in calculating their snow storage needs. The table on page 7K-12B gives rectangular dimensions for the snow storage areas; however, Plates 7-1B, -1F, and –1G show most of the areas have irregular shapes. In a phone call on September 12, 2006, Mark Reynolds stated that the dimensions used in the calculations were based on the square-footage of the areas as determined from the AutoCAD drawings.

The Permittee's determination of the capacity of the snow storage areas indicates that, for a 30-inch snow pack, the areas are adequate to store snow removed from the primary access road to Mines #3 and #4. The Division also estimated storage capacity and the results indicate somewhat less storage capacity than the Permittee's estimate. Both sets of storage capacity calculations are based on a 30-inch average snow pack. Roughly 50% of the time that estimated average is going to be exceeded - sometimes by a lot - so the difference between the Division's approximated storage volumes and the Permittee's is not significant; the Permittee will just run out of storage in these ASCA areas some years because of heavier snowfall. In addition, the Permittee states that projected storage capacity might be exceeded because of the other unknowns and assumptions involved in approximating the volume of snow and the storage capacity.

The plan previously stated that in the event that any area reaches 90% of its design capacity, the Permittee would hire a contractor to haul the snow from the area and dispose of it. NOVs have been issued to other Permittees (e.g., White Oak and PacifiCorp) for disposal of snow off the permit area. That may sound strange at first, but snow is no different from other water on the permit area: it is subject to the same rules and needs to be treated in the same manner, and it must meet the same water-quality and - if necessary - treatment criteria before

being discharged (or hauled) from the permit area (R645-301-751). Pete Hess informed the Permittee of this deficiency during an inspection on September 14, 2006, and the Division e-mailed the Permittee on September 15, 2006 to confirm the need to clarify how and where the excess snow will be disposed of. The statement on page 7K-12B has been changed to state that if any snow-storage area reaches 90% of its design capacity, C. W. Mining will transport the excess snow "to the entrance of Sediment Pond A, B, or C based on the available capacity of the ponds."

Area 2 is planned to store snow from the #3 Mine access road between the WHR turnoff and the bin. Plate 7-1F shows drainage from Area 2 will flow along a berm that roughly parallels the conveyor system, through the conveyor tunnel under Primary Conveyor Access Road # 1, and into Catch Basin 1. Stage-capacity information for Catch Basin 1 is on page 7K-24.

A silt fence at the outlet of ditch D-37U will treat snowmelt from Area 7, which stores snow from the road from the WHR Tanks Seam turnoff to the last switchback below the # 4 Mine pad. Plate 7-1G shows D-37U extends through and to the end of Area 7, where the silt fence will treat the runoff.

Findings:

Hydrologic Information is sufficient to meet the requirements of the Coal Mining Rules.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Mining Facilities Maps

This amendment included copies of Plates 7-1B, 7-1F, 7-1G, and 7-5A:

- Plate 7-1B shows the location of BTCA H, Area 1.
- Plate 7-1F shows drainage from Area 2 will flow along a berm that roughly parallels the conveyor system, through the conveyor tunnel under Primary Conveyor Access Road # 1, and into Catch Basin 1. It also shows the location of Area 4.
- Plate 7-1G shows D-37U extends through and to the end of Area 7, where silt fence will treat the runoff. Plate 7-1G also shows the locations of Areas 3, 5, 6, and 8.
- Plate 7-5G has been updated to show the enlarged disturbed area boundary around BTCA H, Area 7.

Findings:

Maps, Plans, and Cross Sections of Mining Operations are sufficient to meet the requirements of the Coal Mining Rules.

RECOMMENDATIONS:

The MRP should be approved.

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